



## PERFORMANCE MEASUREMENT AND EVALUATION OF SELECTED FINANCIAL INSTITUTIONS IN INDIA

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### Abstract/Introduction

Financial system play major role for the development of the economy. It feeds money to the corporate sector to run long term as well as short term. Banks have been providing loans and advances to public or corporate. Banks playing vital role in the corporate sectors through raising funds from public like saving deposit and lend it to corporate in terms of loans and advances. Hence intention is to know the top ten financial institutions in India which is mentioned in the southern economist top 50 companies in the rank in the year 2016, these data calculated by different formula and measured, evaluated them to attain the objectives of the study, it this paper secondary source has been used for measure the performance and evaluated them by using suitable statistical tools, therefore it's on an entailed 'performance measurement and evaluated of selected financial institutions in India'.

**Keywords:** Descriptive statistics, One way ANOVA, Financial ratios etc.

### Objectives of the Study

1. To examine the theoretical background of the selected tools in the study area.
2. To measure the performance of selected financial institutions in India
3. To evaluate the performance of selected banks in India

### Hypothesis of the Study

Ha- There is a significance difference of different ratios of selected financial institutions in India.

### Methodology of the Study

**Methods of the Study:** Descriptive Research used for analysis, measure and evaluated the performance of selected banks in India.

**Sources of the study:** The sources of the study was collected from secondary sources such as annual reports, ratios, stocks return of the banks and Nifty 50 Index as market return of the banks, ratios of

**Sample of the study:** Systematic sampling used for measure and evaluate the performance of top 10 banks, which is mentioned in southern economist issues February 2017, page no: 56-57, top 50 companies in the year 2016 on ET 500 future ready companies.

**Tools used for Analysis:** Descriptive statistics, One Way ANOVA under the 5 percent level of significance in two tailed.

### Theoretical Background of the Study

A Non-performing asset (NPA) is a credit or Loans facility in respect of which the interest and/or installment of principal has remained 'past due' for a specified period of time./ an asset is tagged as Non performing when it ceases to generate income for the lender.

Net NPA as  $\text{Net NPA} = \text{Gross NPA} - (\text{Balance in Interest Suspense account} + \text{DICGC/ECGC claims received and held pending adjustment} + \text{Part payment received and kept in suspense account} + \text{Total provisions held})$ .

Return on equity (ROE) is the amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. ROE is expressed as a percentage and calculated as:  $\text{Return on Equity} = \frac{\text{Net Income}}{\text{Shareholder's Equity}}$  and it Also known as "return on net worth" (RONW).

Net profit margin is the percentage of revenue remaining after all operating expenses, interest, taxes and preferred stock dividends (but not common stock dividends) have been deducted from a company's total revenue. It has been calculated by using the formula,

$$\text{Net Profit Margin} = \frac{(\text{Total Revenue} - \text{Total Expenses})}{\text{Total Revenue}} = \frac{\text{Net Profit}}{\text{Total Revenue}}$$

Return on capital employed (ROCE) is a financial ratio that measures a company's profitability and the efficiency with which its capital is employed "Capital Employed" as shown in the denominator is the sum of shareholders' equity and debt liabilities; it can be simplified as  $(\text{Total Assets} - \text{Current Liabilities})$ . Instead of using capital employed at an arbitrary point



in time, analysts and investors often calculate ROCE based on “Average Capital Employed,” which takes the average of opening and closing capital employed for the time period. . ROCE is calculated as:  $ROCE = (EBIT) / \text{Capital Employed}$ . A higher ROCE indicates more efficient use of capital. ROCE should be higher than the company’s capital cost; otherwise it indicates that the company is not employing its capital effectively and is not generating shareholder value.

The current ratio is a liquidity ratio that measures a company's ability to pay short-term and long-term obligations. To gauge this ability, the current ratio considers the current total assets of a company (both liquid and illiquid) relative to that company’s current total liabilities. It can be calculated by using followed formula:  $\text{Current Ratio} = \text{Current Assets} / \text{Current Liabilities}$ .

The current ratio is called “current” because, unlike some other liquidity ratios, it incorporates *all current* assets and liabilities. The ideal ratio of the current ratio is 2:1. The current ratio is also known as the working capital ratio.

The quick ratio is an indicator of a company’s short-term liquidity. The quick ratio measures a company’s ability to meet its short-term obligations with its most liquid assets. For this reason, the ratio excludes inventories from current assets, and is calculated as follows:

$$\begin{aligned} \text{Quick ratio} &= (\text{current assets} - \text{inventories}) / \text{current liabilities, (or)} \\ &= (\text{cash and equivalents} + \text{marketable securities} + \text{accounts receivable}) / \text{current liabilities} \end{aligned}$$

Earnings per share (EPS) are the portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serves as an indicator of a company's profitability. Calculated as:

$$= \frac{\text{Net Income} - \text{Dividends on Preferred Stock}}{\text{Average Outstanding Shares}}$$

**Table 1: The Gross Non Performing Assets of selected financial Institutions in India**

Gross NPA	N	Mean	Stand Dev	C.V	ANOVA
HDFC	5	3030.90	944.91	0.31	
ICICI	5	14180.97	7112.79	0.50	
Axis Bank	5	3969.54	1386.28	0.35	
SBI	5	61473.73	22080.98	0.36	F=8.588543
Canara bank	5	12507.98	11197.07	0.90	P-value=0.00
Bank of India	5	19720.04	17947.84	0.91	F crit=2.124
Bank of Baroda	5	19359.14	12031.37	0.62	
PNB	5	24515.73	18605.26	0.76	
Union bank	5	10305.84	8647.57	0.84	
IDBI	5	11704.31	8003.83	0.68	

**Interpretation:** The above table depicted Gross NPAs that The SBI bank has maintained higher average Gross NPAs as compare to rest of the banks and HDFC bank has maintained less Gross NPAs than others selected sample.

The SBI Bank has more efficiency and less consistency then others banks but HDFC bank has maintained more consistency and less efficiency.

**Coefficient Variation:** Bank of India is greater indicate that it is more variable, less stable, less uniform, less reliable or less homogeneous. HDFC bank has less Coefficient Variation; it indicates that less variable, more stable, more uniform, more consistent or more homogeneous.

**Hypothesis:** Alternative Hypothesis: There is a significance difference of Gross NPAs in the study area.

**Interpretation:** the calculated value of the above data shows that there is significance on the basis of Probability Value is 0.00 and calculated value (8.58) is fall in accept area of Alternative Hypothesis and it has greater than the F. Critical Value (2.124). Hence it concludes that there is a significance difference of Gross NPAs in the study area.



**Table 2: Net Non Performing Assets of selected financial Institutions in India**

Net NPAs	N	Mean	Std Dev	C.V	ANOVA
HDFC	5	771.59	382.89	0.50	
ICICI	5	5321.59	4606.81	0.87	F:4.096
Axis Bank	5	1376.86	688.39	0.50	P.Value:0.00
SBI	3	31194.12	21535.18	0.69	F.Crit: 2.137
Canara Bank	5	8840.57	6973.75	0.79	
Bank of India	5	11706.98	9810.85	0.84	
Bank of Baroda	5	9450.99	5459.66	0.58	
PNB	5	14485.36	12381.80	0.85	
Union bank of India	5	6532.71	4475.81	0.69	
IDBI	5	6309.90	4831.75	0.77	

**Interpretation:** The above table state the Net NPAs that The SBI bank has maintained higher average Net NPAs as compare to rest of the banks and HDFC bank has maintained less Net NPAs than others selected sample.

The SBI Bank has more efficiency and less consistency then others banks but HDFC bank has maintained more consistency and less efficiency.

**Coefficient Variation:** Bank of India is greater indicate that it is more variable, less stable, less uniform, less dependable or less homogeneous. HDFC bank has less Coefficient Variation; it indicates that less variable, more stable, more uniform, more consistent or more homogeneous.

**Hypothesis:** Alternative Hypothesis: There is a significance difference of Net NPAs in the study area.

**Interpretation:** The calculated value of Probability Value is 0.00 and calculated value (4.096) is fall in accept area of Alternative Hypothesis and it has greater than the F. Critical Value (2.137). Hence it concludes that there is a significance difference of Net NPAs in the study area.

**Table 3: The Return on Net worth percent of selected financial Institutions in India**

Return on Net worth%	N	Mean	Std Dev	C.V	ANOVA
HDFC	5	17.74	1.26	0.07	
ICICI	5	12.33	1.37	0.11	F:1.59
Axis Bank	5	16.48	1.25	0.08	P-value:0.148
SBI	5	10.90	3.16	0.29	F Crit:2.124
Canara bank	5	7.61	10.53	1.38	
Bank of India	5	4.00	13.55	3.39	
Bank of Baroda	5	7.99	12.46	1.56	
PNB	5	8.06	11.55	1.43	
Union bank of India	5	10.73	2.99	0.28	
IDBI	5	2.72	11.24	4.13	

**Interpretation:** The above table depicted that Return on net worth of Axis bank has maintained higher average Return on net worth as compare to rest of the banks and IDBI bank has maintained less Return on net worth than others selected sample.

The PNB Bank has more efficiency and less consistency then others banks but Axis bank has maintained more consistency and less efficiency.

**Coefficient Variation:** Bank of India is greater indicate that it is more variable, less stable, less uniform, less reliable or less homogeneous. Axis bank has less Coefficient Variation; it indicates that less variable, more stable, more uniform, more consistent or more homogeneous.

**Hypothesis:** Alternative Hypothesis: There is a significance difference of Return on net worth in the study area.



**Interpretation:** The calculated value of the above data shows that there is insignificance on the basis of Probability Value is 0.148 and calculated value (1.59) is fall in reject area of Alternative Hypothesis and it has lesser than the F. Critical Value (2.124). Hence it concludes that there is no significance difference of Return on net worth in the selected financial institutions.

**Table 4: The Net Profit Margin of selected financial Institutions in India**

Net profit margin%	N	Mean	Std Dev	C.V	ANOVA
HDFC	5	20.04	0.93	0.05	
ICICI	5	20.69	1.85	0.09	F:6.147
Axis Bank	5	19.88	0.70	0.04	P.Value:0.00
SBI	5	9.08	2.32	0.25	F-Crit:2.214
Canara bank	5	5.00	6.63	1.33	
Bank of India	5	2.91	9.99	3.43	
Bank of Baroda	5	7.39	11.43	1.55	
PNB	5	6.14	8.56	1.39	
Union bank of India	5	6.52	1.94	0.30	
IDBI	5	2.09	8.77	4.20	

**Interpretation:** The above table state the Net Profit Margin of ICICI bank has maintained higher average Net Profit Margin as compare to rest of the banks and IDBI bank has maintained less Net Profit Margin than others selected sample in study.

The Bank of Baroda has more efficiency and less consistency then others banks but Axis bank has maintained more consistency and less efficiency.

**Coefficient Variation:** Bank of India is greater indicate that it is more variable, less stable, less uniform, less dependable or less homogeneous. HDFC bank has less Coefficient Variation; it indicates that less variable, more stable, more uniform, more consistent or more homogeneous.

**Hypothesis:** Alternative Hypothesis: There is a significance difference of Net Profit Margin in the study area.

**Interpretation:** The calculated value of Probability Value is 0.00 and calculated value (6.147) is fall in accept area of Alternative Hypothesis and it has greater than the F. Critical Value (2.214). Hence it concludes that there is a significance difference of Net Profit Margin percent in the study area.

**Table 5: The Return on Capital Employed of selected financial Institutions in India**

Return On Capital Employed (%)	N	Mean	Std Dev	C.V	ANOVA
HDFC	5	10.89	0.32	0.03	F-36.98
ICICI	5	9.68	0.26	0.03	P-Value:0.00
Axis Bank	5	10.45	0.21	0.02	F Crit-2.124
SBI	5	9.21	0.21	0.02	
Canara bank	5	9.43	0.28	0.03	
Bank of India	5	8.17	0.51	0.06	
Bank of Baroda	5	7.44	0.56	0.07	
PNB	5	9.31	0.52	0.06	
Union bank of India	5	9.55	0.24	0.03	
IDBI	5	9.20	0.31	0.03	

**Interpretation:** The above table states the Return On Capital Employed of HDFC bank has maintained higher average Return on Capital Employed as compare to rest of the banks and bank of India has maintained less Return On Capital Employed than others selected sample in study.

The Bank of Baroda has more efficiency and less consistency then others banks and Axis bank & SBI have maintained more consistency and less efficiency.



**Coefficient Variation:** Bank of India is greater indicate that it is more variable, less stable, less uniform, less dependable or less homogeneous. Axis bank & SBI bank have less Coefficient Variation; it indicates that less variable, more stable, more uniform, more consistent or more homogeneous.

**Hypothesis:** Alternative Hypothesis: There is a significance difference of Return On Capital Employed in the study area.

**Interpretation:** The calculated value of Probability Value is 0.00 and calculated value (36.98) is fall in accept area of Alternative Hypothesis and it has greater than the F. Critical Value (2.214). Hence it concludes that there is a significance difference of Return on Capital Employed in the study area.

**Table 6: The Current ratios of selected financial Institutions in India**

Groups	N	Mean	Std Dev	C.V	ANOVA
HDFC	5	0.062	0.014832	0.239232	F:-5.27
ICICI	5	0.088	0.026833	0.304918	P-Value:0.00
Axis Bank	5	0.038	0.017889	0.470751	F Crit:2.12
SBI	5	0.046	0.015166	0.32969	
Canara bank	5	0.032	0.004472	0.139754	
Bank of India	5	0.036	0.008944	0.248452	
Bank of Baroda	5	0.028	0.013038	0.465657	
PNB	5	0.022	0.004472	0.203279	
Union bank of India	5	0.024	0.008944	0.372678	
IDBI	5	0.05	0.044721	0.894427	

**Interpretation:** The above table depicted that Current ratios of ICICI bank has maintained higher average Current ratio as compare to rest of the banks and IDBI has maintained less Current ratio than others selected banks.

IDBI has more efficiency and less consistency then others banks and Canara bank & PNB have been maintaining more consistency and less efficiency.

**Coefficient Variation:** IDBI bank is greater indicate that it is more variable, less stable, less uniform, less dependable or less homogeneous. Canara bank has less Coefficient Variation; it indicates that less variable, more stable, more uniform, more consistent or more homogeneous.

**Hypothesis:** Alternative Hypothesis: There is a significance difference of Current ratios in the study area.

**Interpretation:** The calculated value of Probability Value is 0.00 and calculated value (5.27) is fall in accept area of Alternative Hypothesis and it has greater than the F. Critical Value (2.12). Hence it concludes that there is a significance difference of Current ratios of selected financial institutions.

**Table 7: The Quick ratios of selected financial Institutions in India**

Groups	N	Mean	Std Dev	C.V	ANOVA
HDFC	5	9.96	3.49	0.35	F-27.52
ICICI	5	13.47	2.56	0.19	P-Value:0.00
Axis Bank	5	21.34	2.70	0.13	F Crit:2.12
SBI	5	11.94	1.26	0.11	
Canara bank	5	24.69	2.67	0.11	
Bank of India	5	26.36	4.27	0.16	
Bank of Baroda	5	23.00	3.68	0.16	
PNB	5	24.74	2.12	0.09	
Union bank of India	5	31.24	3.31	0.11	
IDBI	5	24.66	2.58	0.10	



**Interpretation:** The above table depicted that Quick ratios of Bank of India has maintained higher average Quick ratio as compare to rest of the banks and HDFC has maintained less Quick ratio than others selected banks.

Bank of India has more efficiency and less consistency then others banks and SBI has been maintaining more consistency and less efficiency.

**Coefficient Variation:** it shows the ratio of the standard deviation to the arithmetic mean. HDFC bank is greater indicate that it is more variable, less stable, less uniform, less dependable or less homogeneous. PNB has less Coefficient Variation; it indicates that less variable, more stable, more uniform, more consistent or more homogeneous.

**Hypothesis:** Alternative Hypothesis: There is a significance difference of Quick ratios in the study area.

**Interpretation:** The calculated value of Probability Value is 0.00 and calculated value (27.52) is fall in accept area of Alternative Hypothesis and it has greater than the F. Critical Value (2.12). Hence it concludes that there is a significance difference of Quick ratios of selected financial institutions.

**Table 8: EPS of selected financial Institutions in India**

Groups	N	Mean	Std Dev	C.V	ANOVA
HDFC	5	35.00	10.41	0.30	F-1.99
ICICI	5	49.88	30.86	0.62	P-Value:0.066
Axis Bank	5	82.25	46.46	0.56	F Crit:2.12
SBI	5	111.38	90.39	0.81	
Canara bank	5	39.37	51.61	1.31	
Bank of India	5	17.28	52.02	3.01	
Bank of Baroda	5	65.19	64.93	1.00	
PNB	5	73.38	72.56	0.99	
Union bank of India	5	28.52	6.16	0.22	
IDBI	5	4.93	13.47	2.73	

**Interpretation:** The above table explains that EPS of SBI bank has maintained higher average EPS as compare to rest of the banks and IDBI bank has maintained less EPS than others selected sample.

The SBI Bank has more efficiency and less consistency then others banks but Union bank of India has maintained more consistency and less efficiency.

**Coefficient Variation:** Bank of India is greater indicate that it is more variable, less stable, less uniform, less reliable or less homogeneous. HDFC bank has less Coefficient Variation; it indicates that less variable, more stable, more uniform, more consistent or more homogeneous.

**Hypothesis:** Alternative Hypothesis: There is a significance difference of EPS in the study area.

**Interpretation:** the calculated value of the above data shows that there is insignificance on the basis of Probability Value is 0.066 and calculated value (1.99) is fall in reject area of Alternative Hypothesis and it has lesser than the F. Critical Value (2.124). Hence it concludes that there is no significance difference of EPS in the selected financial institutions.

**Table 9: Possible returns of selected financial institution in India**

Year\Banks	HDFC	ICICI	SBI	Canara	BOI	BOB	PNB	UBI	IDBI
2012	58.95	66.13	47.19	36.28	28.75	31.19	11.14	61.72	43.19
2013	-1.92	-3.42	-25.94	-43.06	-30.71	-25.51	-28.08	-52.43	-40.35
2014	43	-67.86	-82.34	59.06	26.98	67.94	-65.04	83.56	10.08
2015	12.82	-25.93	-26.68	-47.94	-61.89	-85.39	-47.22	-37.96	21.53
2016	12.12	-2.35	9.23	12.5	-6.74	-3.53	-0.04	-17.13	-21.93





The above table values have been calculated by using formula is Possible return=this year stock price-Last year stock price divided by last year price multiple with 100.

**Table 10: Descriptive statistics possible returns of selected financial institution in India**

	HDFC	ICICI	SBI	Canara	BOI	BOB	PNB	UBI	IDBI	Nifty 50 Index
Mean	24.99	-6.69	-15.71	3.37	-8.72	-3.06	-25.85	7.55	2.50	12.96
Stand Error	11.22	21.73	21.50	21.28	17.31	25.98	14.20	27.38	15.01	7.01
Median	12.82	-3.42	-25.94	12.50	-6.74	-3.53	-28.08	-17.13	10.08	6.76
Stand Dev	25.08	48.59	48.07	47.58	38.71	58.09	31.75	61.22	33.57	15.68
Variance	628.88	2361.06	2310.74	2264.07	1498.26	3374.13	1007.98	3747.44	1127.06	246.01
Kurtosis	-1.65	1.47	0.38	-2.54	-1.42	0.01	-1.99	-2.70	-1.50	-2.68
Skewness	0.57	0.55	-0.13	-0.10	-0.45	-0.36	-0.03	0.50	-0.21	0.36
Range	60.87	133.99	129.53	107.00	90.64	153.33	76.18	135.99	83.54	35.45
Min	-1.92	-67.86	-82.34	-47.94	-61.89	-85.39	-65.04	-52.43	-40.35	-4.06
Max	58.95	66.13	47.19	59.06	28.75	67.94	11.14	83.56	43.19	31.39
Sum	124.97	-33.43	-78.54	16.84	-43.61	-15.30	-129.24	37.76	12.52	64.80
N	5	5	5	5	5	5	5	5	5	5

The selected financial intuitions return of the stocks ICICI, SBI, BOI, BOB and PNB shows negative, HDFC bank has more return than market return and Canara, UBI and IDBI banks are positive return but less than the market return.

- Median of the selected banks show the middle most or most central value in the in the selected banks.
- Standard Deviation shows the Total risk of the selected financial institutions has greater than the market risk.
- Variance is a measure of mean squared variation or distance of the observations from their arithmetic.
- Kurtosis tool uses for a measure enabling the shape and nature of the middle value of the distribution curve or its peakness.
- Skewness means 'lack of Symmetry'. Thus the study of the shape of the curve drawn with the help of frequency distribution is helpful in understanding how the observations are varying about the mean values. As above data shows that HDFC, ICICI, UBI and Nifty 50 index show the positive and rest of the banks show the negative Skewness.
- Range is the difference between the highest and the lowest observation or the value of the observation.

**Table 11: Covariance and correlation of selected financial institutions stock in India**

Cov/ Corr	HDFC	ICICI	SBI	Canara	BOI	BOB	PNB	UBI	IDBI	Nifty 50 Index
HDFC	503.11	<b>0.30</b>	<b>0.21</b>	<b>0.81</b>	<b>0.81</b>	<b>0.70</b>	<b>0.17</b>	<b>0.93</b>	<b>0.82</b>	<b>0.85</b>
ICICI	292.32	1888.85	<b>0.96</b>	<b>-0.01</b>	<b>0.20</b>	<b>-0.03</b>	<b>0.91</b>	<b>-0.01</b>	<b>0.29</b>	<b>0.07</b>
SBI	204.78	1788.40	1848.59	<b>-0.04</b>	<b>0.11</b>	<b>-0.13</b>	<b>0.96</b>	<b>-0.10</b>	<b>0.26</b>	<b>-0.10</b>
Canara	775.39	-27.01	-75.01	1811.25	<b>0.95</b>	<b>0.94</b>	<b>0.08</b>	<b>0.94</b>	<b>0.40</b>	<b>0.86</b>
BOI	625.76	300.89	167.16	1397.70	1198.60	<b>0.97</b>	<b>0.25</b>	<b>0.89</b>	<b>0.32</b>	<b>0.92</b>
BOB	810.79	-68.08	-291.06	2068.71	1737.66	2699.30	<b>0.04</b>	<b>0.87</b>	<b>0.17</b>	<b>0.92</b>
PNB	107.66	1121.35	1167.77	94.11	244.66	56.35	806.38	<b>-0.07</b>	<b>0.06</b>	<b>-0.03</b>
UBI	1138.82	-26.50	-231.99	2182.08	1686.63	2471.40	-101.15	2997.95	<b>0.62</b>	<b>0.94</b>
IDBI	550.85	377.42	334.93	510.26	335.47	267.71	53.28	1017.47	901.64	<b>0.44</b>
Nifty 50 Index	266.91	42.00	-59.77	516.36	446.37	671.70	-11.26	718.27	184.87	196.81



The above table states that bold letter indicates correlation of selected financial institutions, and rest of the data shows that covariance of the selected banks.

“Correlation analysis is the statistical tool we can use to describe the degree to which one variable is linearly to another”.

**Covariance:** The covariance is a measure of how returns of two securities move together. If the returns of the two securities move in the same direction consistently the covariance would be positive. If the returns of the two securities move in opposite direction consistently the covariance would be negative. If the movements of returns are independent of each other, covariance would be close to zero. Dividing the covariance between two securities by product of the standard deviation of each security gives such a standardized measure; this measure is called the coefficient of correlation.

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